UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/524,801	02/16/2005	Takeshi Fujimatsu	MAT-8667US	1051

23122 7590 04/15/2008

RATNERPRESTIA
P O BOX 980
VALLEY FORGE, PA 19482-0980

EXAMINER	
RICE, ELISA M	
ART UNIT	PAPER NUMBER
2624	

MAIL DATE	DELIVERY MODE
04/15/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/524,801	FUJIMATSU, TAKESHI	
	Examiner	Art Unit	
	ELISA M. RICE	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *1/2/2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Applicant's amendments filed on January 2, 2008 have been received and entered. Claims 1-27 are currently pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Umezawa (JP 2000-060825), Wallace et al. (EP 1246151) and Ishizuka (JP 64-082185).

Regarding claim 1, Umezawa discloses an image input device comprising:

an image input part into which an image is entered (“The control part 2 of an iris recognizing device 1 obtains the still picture of an instant when a start switch 11 is depressed “, abstract);

an image evaluation part which evaluates image quality or subject of the image by using a predetermined threshold value (“The control part 2 performs access to the data group of the person to be recognized based on the inputted ID code of the person to be recognized and inquires the iris code.”, abstract);

a cause determination part which determines a cause of image degradation corresponding to the image, based on an evaluation result of the image by the image evaluation part(“That is, it is analyzed by which cause NG occurs and which kind of operation is required for the cancellation and the indication for urging the operation is displayed in a display part 4.”, abstract);

Umezawa does not disclose the following:

1) an output part which outputs to a user a question being selected based on the determined cause of image degradation determined by the cause determination part;

2) an answer input part into which an answer to the question is entered;

3) a cause determination part which determines whether a match occurs or not between the cause of image degradation and the cause of image degradation corresponding to the answer, wherein in a case where the cause determination part determines that the cause of image degradation and the cause of image

degradation corresponding to the answer do not match with each other, the image evaluation part changes the predetermined threshold value used to evaluate the image so that the cause of image degradation and the cause of image degradation corresponding to the answer can match with each other.

However, Iliff teaches an output part which outputs to a user a question being selected based on the determined cause determined by the cause determination part, an answer input part into which an answer to the question is entered and a cause determination part which determines whether a match occurs or not between the cause and the cause corresponding to the answer ("This preliminary diagnosis is subsequently refined utilizing additional examination questions.", column 5, lines 36-39).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Iris recognition system of Umezawa with Wallace's individually tailored diagnostic system wherein a diagnosis is refined using questions directed to the user in order to more fully ascertain the diagnosis ("confirmed and reinforced", abstract).

Wallace does not disclose the following:

wherein in a case where the cause determination part determines that the cause of image degradation and the cause of image degradation corresponding to the answer do not match with each other, the image evaluation part changes the predetermined threshold value used to evaluate the image so that the cause of

image degradation and the cause of image degradation corresponding to the answer can match with each other.

However, Ishizuka teaches wherein changes are made to the predetermined threshold value used to evaluate the image so that the results can match with each other ("An update value about the reject value 2 is calculated based on the result information of a decision result input part 4 to input the decision result information of whether the information of this standard pattern is correct.", Ishizuka, abstract)

It would have been obvious to one of ordinary skill in the art to modify the invention of the combination of Umezawa and Wallace et al. (EP 1246151) to change the threshold value used in making its cause determinations because according to Ishizuka in the abstract "since the reject value is updated in accordance with the state of the false recognition about the respective standard patterns, the false recognitions can be reduced."

Claims 2, 3, and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Umezawa (JP 2000-060825), Wallace et al. (EP 1246151) and Ishizuka (JP 64-082185), futher in view of Kondo (US 7,130,453).

Regarding claim 2, the combination of Umezawa, Wallace et al. (EP 1246151), and Ishizuka disclose the image input device according to claim 1, wherein the image evaluation part comprises:

a degree-of-focusing determination part which determines whether a degree of focusing of the image is within a second threshold range or not (" In case the profile of a line is started, such a judgment can be performed when a control section 2 detects whether it is that the difference in the contrast value of a part with the deep color of a static image and a light part has become beyond a predetermined value.", Umezawa, "Detailed Description", paragraph 34) ;

a subject detection part which detects a presence or absence of an area which is assumed to be the subject of the image (The above (4) is judged when the eyes of the identified person in the static image of the eyes of an identified person are in the location from which it separated from the center of a screen. Such a judgment can be performed by detecting a dark-eyed part (part with the lowest brightness) out of a static image, and detecting whether it is that the location is settled near the center of a screen (the field is appointed beforehand," Umezawa, "Detailed Description", paragraph 36);

and a high intensity area detection part which detects a presence or absence of a high intensity area exceeding a third threshold range from the image ("The above (3) is judged when an unusually high (bright) part has brightness in the iris of the

eye in the static image of the eyes of an identified person. Such a judgment can be performed by detecting a dark-eyed part (part with the lowest brightness) out of a static image, and detecting whether it is that there is a part bright beyond the predetermined value beforehand defined into it.", Umezawa, "Detailed Description", paragraph 35)

The combination of Umezawa, Wallace et al. (EP 1246151) and Ishizuka does not disclose an intensity determination part which determines whether intensity of the image is within a first threshold range or not.

However, Kondo does teach an intensity determination part which determines whether intensity of the image is within a first threshold range or not ("If the average brightness is greater than the threshold, no contrast correction is performed.", Kondo, paragraph 76)

It would have been obvious to one of ordinary skill in the art to modify the invention of the combination of Umezawa, Wallace et al. (EP 1246151), and Ishizuka to include an intensity determination part which determines whether intensity of the image is within a first threshold range or not as taught by Kondo in order to determine whether the brightness of the image is suitable or if a different level of illumination must be applied to the subject in a retake image (brightness correction).

Regarding claim 3, the combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, and Kondo discloses the image input device according to claim 2, wherein the cause determination part determines that the cause of image degradation is reflection due to external light when:

the intensity determination part determines that the intensity of the image is within the first threshold range; the degree-of-focusing determination part determines that the degree of focusing of the image is within the second threshold range; the subject detection part detects the area which is assumed to be the subject of the image;

and the high intensity area detection part determines that there is no area exceeding the third threshold range in the image. ("(3) Reflection of lighting is

reflected in the iris," Umezawa, paragraph 32, "The above (3) is judged when

an unusually high (bright) part has brightness in the iris of the eye in the static image of the eyes of an identified person. Such a judgment can be performed by detecting a dark-eyed part (part with the lowest brightness) out of a static image, and detecting whether it is that there is a part bright beyond the predetermined value beforehand defined into it.", Umezawa, "Detailed Description", paragraph 35;) According to the Umezawa reference, in the particular circumstance where the intensity determination part determines that the intensity of the image is within the first threshold range, the degree-of-focusing determination part determines that the degree of focusing of the image is within the second

threshold range, the subject detection part detects the area which is assumed to be the subject of the image, but the high intensity area detection part determines that there is no area exceeding the third threshold range in the image, the cause determination part would determine that the cause of image degradation is reflection due to external light (Umezawa, paragraph 32 to 36).

Regarding claim 4, the combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka and Kondo teaches the image input device according to claim 3, wherein when the cause determination part determines that the cause of image degradation and the cause of image degradation corresponding to the answer do not match with each other, the image evaluation part changes one of the first threshold range, the second threshold range and the third threshold range ("An update value about the reject value 2 is calculated based on the result information of a decision result input part 4 to input the decision result information of whether the information of this standard pattern is correct.", Ishizuka, abstract).

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Umezawa (JP 2000-060825) , Wallace et al. (EP 1246151) and Ishizuka (JP 64-082185), further in view of Matsushita (JP 10-005195).

Regarding claim 5, while the combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka discloses the image input device according to claim 1, the

combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka does not disclose further comprising:

an irradiation part which irradiates the subject (lighting part 13; applying light on the eyeball, Matsushita, abstract);

and an irradiation output control part which controls an output of the irradiation part ("a lighting part 13 provided with a lighting array part 13b applies irradiation light by an instruction from a control part 12 and only the light reflected by a lens, etc., of the eyeball and glasses out of the reflected lights is inputted in a reflection part 15.", Matsushita, abstract).

wherein when the cause determination part determines that the cause of image degradation is reflection due to the external light, the irradiation output control part increases the output of the irradiation part ("To reduce noise caused by irregular reflection of a lens of glasses by applying light on the eyeball so as to photograph an image of the eyeball by the light reflected against the eyeball", abstract, Matsushita).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of the combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka to include an irradiation part which corrects reflection issues in order "to reduce noise caused by irregular reflection of a lens of glasses" (Matsushita, abstract) because as Matsushita states in paragraph 4, "since 100t of reflected lights by lens 100s of these glasses etc. serves as a noise for the image of the iris, it becomes difficult to extract the pattern of the

good iris" and "if the pattern of the iris is acquired from the image of the poor iris and it identifies based on the pattern of the iris, the precision of discernment will be worsened or it will become discernment impossible."

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Umezawa (JP 2000-060825) and Kondo (US 7,130,453), in view of Flom et al. (US 4,641,349).

Regarding claim 6, Umezawa discloses an image input device comprising: an image input part into which an image of a subject is entered; a degree-of-focusing determination part which determines whether a degree of focusing of the image is within a second threshold range or not (" In case the profile of a line is started, such a judgment can be performed when a control section 2 detects whether it is that the difference in the contrast value of a part with the deep color of a static image and a light part has become beyond a predetermined value.", Umezawa, "Detailed Description", paragraph 34);

a subject detection part which detects a presence or absence of an area which is assumed to be the subject of the image(The above (4) is judged when the eyes of the identified person in the static image of the eyes of an identified person are in the location from which it separated from the center of a screen. Such a judgment can be performed by detecting a dark-eyed part (part with the lowest

brightness) out of a static image, and detecting whether it is that the location is settled near the center of a screen (the field is appointed beforehand," Umezawa, "Detailed Description", paragraph 36);

a high intensity area detection part which detects a presence or absence of a high intensity area exceeding a third threshold range from the image("The above (3) is judged when an unusually high (bright) part has brightness in the iris of the eye in the static image of the eyes of an identified person. Such a judgment can be performed by detecting a dark-eyed part (part with the lowest brightness) out of a static image, and detecting whether it is that there is a part bright beyond the predetermined value beforehand defined into it.", Umezawa, "Detailed Description", paragraph 35);

and a cause determination part which determines that a cause of image degradation of the image is reflection of an object off the cornea due to external light when:

the degree-of-focusing determination part determines that the degree of focusing of the image is within the second threshold range; the subject detection part detects the area which is assumed to be the subject of the image; and the high intensity area detection part determines that there is no area exceeding the third threshold range in the image ("(3) Reflection of lighting is reflected in the iris,"

Umezawa, paragraph 32, "The above (3) is judged when an unusually high

(bright) part has brightness in the iris of the eye in the static image of the eyes of

an identified person. Such a judgment can be performed by detecting a dark-eyed part (part with the lowest brightness) out of a static image, and detecting whether it is that there is a part bright beyond the predetermined value beforehand defined into it.", Umezawa, "Detailed Description", paragraph 35;) According to the Umezawa reference, in the particular circumstance where the intensity determination part determines that the degree-of-focusing determination part determines that the degree of focusing of the image is within the second threshold range, the subject detection part detects the area which is assumed to be the subject of the image, but the high intensity area detection part determines that there is no area exceeding the third threshold range in the image, the cause determination part would determine that the cause of image degradation is reflection due to external light (Umezawa, paragraph 32 to 36).

Umezawa, however, does not disclose:

1) an intensity determination part which determines whether intensity of the image is within a first threshold range or not

2) a cause determination part which determines that a cause of image degradation of the image is reflection due to external light when the degree-of-focusing determination part determines that the degree of focusing of the image is within the second threshold range; the subject detection part detects the area which is assumed to be the subject of the image; and the high intensity area detection part determines that there is no area exceeding the third threshold

range in the image AND the intensity determination part determines that the intensity of the image is within the first threshold range.

3) determining that a cause of image degradation of the image is reflection of an object off the cornea due to external light when:

Kondo teaches wherein an intensity determination part which determines whether intensity of the image is within a first threshold range or not ("If the average brightness is greater than the threshold, no contrast correction is performed.", Kondo, paragraph 76);

It would have been obvious to one of ordinary skill in the art to modify the invention of the combination of Umezawa, Wallace et al. (EP 1246151), and Ishizuka to include an intensity determination part which determines whether intensity of the image is within a first threshold range or not in order to determine whether the brightness of the image is suitable or if a different level of illumination must be applied to the subject in a retake image.

The combination of Umezawa and Kondo teach a cause determination part which determines that a cause of image degradation of the image is reflection due to external light when the degree-of-focusing determination part determines that the degree of focusing of the image is within the second threshold range; the subject detection part detects the area which is assumed to be the subject of the image; and the high intensity area detection part determines that there is no area exceeding the third threshold range in the image and the intensity determination part determines that the intensity of the image is within

the first threshold range. According to the combination of Umezawa and Kondo, in the particular circumstance where the intensity determination part determines that the intensity of the image is within the first threshold range, the degree-of-focusing determination part determines that the degree of focusing of the image is within the second threshold range, the subject detection part detects the area which is assumed to be the subject of the image, but the high intensity area detection part determines that there is no area exceeding the third threshold range in the image, the cause determination part would determine that the cause of image degradation is reflection due to external light (Umezawa, paragraph 32 to 36).

The combination of Umezawa and Kondo does not disclose determining that a cause of image degradation of the image is reflection of an object off the cornea due to external light.

Flom teaches determining that a cause of image degradation of the image is reflection of an object off the cornea due to external light (column 9, lines 12-16).

It would have been obvious to one of ordinary skill in the art to modify the invention of the combination of Umezawa and Kondo to determine that a cause of image degradation of the image is reflection of an object off the cornea due to external light as taught by Flom in order that “this reflection image may be used to position the eye according to known eye-positioning techniques. Proper positioning of the eye will help to provide a standardized image of iris 20 and

pupil 30 and will ensure that the intense reflection of the target image does not reach camera 84" (column 9, lines 20-26).

Claim 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Umezawa (JP 2000-060825) , Wallace et al. (EP 1246151) and Ishizuka (JP 64-082185), further in view of Uchida (US 6,980, 669).

Regarding claim 7, the combination of Umezawa, Wallace et al. (EP 1246151), and Ishizuka discloses an authentication device comprising: an image input device according to claim 1; and an authentication process part which performs an authentication process by generating authentication information from an image outputted from the image input device, and by comparing the authentication information with registered authentication information previously registered ("And predetermined characteristic quantity is extracted and coded from the image of the cut-down iris, and an iris code is generated (step 25).", Umezawa, paragraph 7; "The control section 2 of this equipment 1 judges whether it is having the conspicuity which is like [with individual recognition possible for this iris code as compared with a standard pattern in the generated iris code] (step 26). When a judgment result is O.K. (i.e., when it is judged that it has the conspicuity which is like [with possible individual recognition]," Umezawa, paragraph 8).

The combination of Umezawa, Wallace et al. (EP 1246151), and Ishizuka do not disclose wherein the authentication process is performed by generating authentication information from an image outputted from an image evaluation part of the image input device. In the combination of Umezawa, Wallace et al. (EP 1246151), and Ishizuka, image evaluation is performed if the authentication process fails.

However, Uchida teaches wherein the authentication process is performed by generating authentication information from an image outputted from an image evaluation part of the image input device (Uchida, Fig. 2, S5; Fig. 3)

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of the combination of Umezawa, Wallace et al. (EP 1246151), and Ishizuka to perform the authentication process after the image evaluation part has determined that the image is of suitable quality because as Uchida states in column 9, lines 32 to 35, “When the user inputs a fingerprint of such a low quality as just described, conventionally a method is usually employed wherein it is determined that "authentication by an automatic verification process is impossible." Obviously, if a bad image is captured (e.g. one with bad image quality) is captured, there is no mechanism to preclude the poor image from being processed because conventional biometric devices merely act as a conduit in transferring information to the computer regardless of its quality. As a result, processing time of the computer and bandwidth

associated with the signal line are wasted because user authentication or identification is virtually guaranteed to fail when processing a bad image.

Regarding claim 8, the combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, and Uchida discloses the authentication device according to claim 7,

wherein the image is an eye image of a user to be authenticated ("when the image considered that the iris code suitable for identification is acquirable is displayed looking at the dynamic image of the face (especially perimeter of an eye), " Umezawa, paragraph 7);

the authentication process part comprises: an authentication information generation part which generates the authentication information by encoding an iris area contained in the eye image ("And predetermined characteristic quantity is extracted and coded from the image of the cut-down iris, and an iris code is generated (step 25).", Umezawa, paragraph 7);

a storage part which stores the registered authentication information previously registered (Umezawa, paragraph 4);

and a comparison and collation part which compares and collates the registered authentication information stored in the storage part with the authentication information generated by the authentication information generation part ("The control section 2 of this equipment 1 judges whether it is having the conspicuity which is like [with individual recognition possible for this iris code as compared

with a standard pattern in the generated iris code] (step 26). When a judgment result is O.K. (i.e., when it is judged that it has the conspicuity which is like [with possible individual recognition]," Umezawa, paragraph 8).

Claims 9, 10, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Umezawa (JP 2000-060825), Wallace et al. (EP 1246151) and Ishizuka (JP 64-082185), futher Kondo (US 7,130,453), further in view of Matsushita (JP 10-005195).

Regarding claim 9, while the combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, and Kondo discloses the image input device according to claim 2, the combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, and Kondo does not disclose further comprising: an irradiation part which irradiates the subject; and an irradiation output control part which controls an output of the irradiation part, wherein when the cause determination part determines that the cause of image degradation is reflection due to the external light, the irradiation output control part increases the output of the irradiation part.

However, Matsushita teaches an irradiation part which irradiates the subject (lighting part 13; applying light on the eyeball, Matsushita, abstract);

and an irradiation output control part which controls an output of the irradiation part ("a lighting part 13 provided with a lighting array part 13b applies irradiation

light by an instruction from a control part 12 and only the light reflected by a lens, etc., of the eyeball and glasses out of the reflected lights is inputted in a reflection part 15.", Matsushita, abstract).

wherein when the cause determination part determines that the cause of image degradation is reflection due to the external light, the irradiation output control part increases the output of the irradiation part ("To reduce noise caused by irregular reflection of a lens of glasses by applying light on the eyeball so as to photograph an image of the eyeball by the light reflected against the eyeball", abstract, Matsushita).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of the combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, and Kondo to include an irradiation part which corrects reflection issues in order "to reduce noise caused by irregular reflection of a lens of glasses" (Matsushita, abstract) because as Matsushita states in paragraph 4, "since 100t of reflected lights by lens 100s of these glasses etc. serves as a noise for the image of the iris, it becomes difficult to extract the pattern of the good iris" and "if the pattern of the iris is acquired from the image of the poor iris and it identifies based on the pattern of the iris, the precision of discernment will be worsened or it will become discernment impossible."

Regarding claim 10, while the combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, and Kondo discloses the image input device according to

claim 3, the combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, and Kondo does not disclose further comprising: an irradiation part which irradiates the subject; and an irradiation output control part which controls an output of the irradiation part, wherein when the cause determination part determines that the cause of image degradation is reflection due to the external light, the irradiation output control part increases the output of the irradiation part.

However, Matsushita teaches an irradiation part which irradiates the subject (lighting part 13; applying light on the eyeball, Matsushita, abstract);

and an irradiation output control part which controls an output of the irradiation part ("a lighting part 13 provided with a lighting array part 13b applies irradiation light by an instruction from a control part 12 and only the light reflected by a lens, etc., of the eyeball and glasses out of the reflected lights is inputted in a reflection part 15.", Matsushita, abstract).

wherein when the cause determination part determines that the cause of image degradation is reflection due to the external light, the irradiation output control part increases the output of the irradiation part ("To reduce noise caused by irregular reflection of a lens of glasses by applying light on the eyeball so as to photograph an image of the eyeball by the light reflected against the eyeball", abstract, Matsushita).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of the combination of Umezawa, Wallace et al.

(EP 1246151), Ishizuka, and Kondo to include an irradiation part which corrects reflection issues in order “to reduce noise caused by irregular reflection of a lens of glasses” (Matsushita, abstract) because as Matsushita states in paragraph 4, “since 100t of reflected lights by lens 100s of these glasses etc. serves as a noise for the image of the iris, it becomes difficult to extract the pattern of the good iris” and “if the pattern of the iris is acquired from the image of the poor iris and it identifies based on the pattern of the iris, the precision of discernment will be worsened or it will become discernment impossible.”

Regarding claim 11, while the combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, and Kondo discloses the image input device according to claim 4, the combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, and Kondo does not disclose further comprising: an irradiation part which irradiates the subject; and an irradiation output control part which controls an output of the irradiation part, wherein when the cause determination part determines that the cause of image degradation is reflection due to the external light, the irradiation output control part increases the output of the irradiation part.

However, Matsushita teaches an irradiation part which irradiates the subject (lighting part 13; applying light on the eyeball, Matsushita, abstract);

and an irradiation output control part which controls an output of the irradiation part (“a lighting part 13 provided with a lighting array part 13b applies irradiation

light by an instruction from a control part 12 and only the light reflected by a lens, etc., of the eyeball and glasses out of the reflected lights is inputted in a reflection part 15.", Matsushita, abstract).

wherein when the cause determination part determines that the cause of image degradation is reflection due to the external light, the irradiation output control part increases the output of the irradiation part ("To reduce noise caused by irregular reflection of a lens of glasses by applying light on the eyeball so as to photograph an image of the eyeball by the light reflected against the eyeball", abstract, Matsushita).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of the combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, and Kondo to include an irradiation part which corrects reflection issues in order "to reduce noise caused by irregular reflection of a lens of glasses" (Matsushita, abstract) because as Matsushita states in paragraph 4, "since 100t of reflected lights by lens 100s of these glasses etc. serves as a noise for the image of the iris, it becomes difficult to extract the pattern of the good iris" and "if the pattern of the iris is acquired from the image of the poor iris and it identifies based on the pattern of the iris, the precision of discernment will be worsened or it will become discernment impossible."

Claims 12,13, 14, 20, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Umezawa (JP 2000-060825), Wallace et al. (EP

1246151) , Ishizuka (JP 64-082185) and Kondo (US 7,130,453), further in view of Uchida (US 6,980, 669).

Regarding claim 12, the combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, and Kondo discloses an authentication device comprising: an image input device according to claim 2; and an authentication process part which performs an authentication process by generating authentication information from an image outputted from the image input device, and by comparing the authentication information with registered authentication information previously registered ("And predetermined characteristic quantity is extracted and coded from the image of the cut-down iris, and an iris code is generated (step 25).", Umezawa, paragraph 7; "The control section 2 of this equipment 1 judges whether it is having the conspicuity which is like [with individual recognition possible for this iris code as compared with a standard pattern in the generated iris code] (step 26). When a judgment result is O.K. (i.e., when it is judged that it has the conspicuity which is like [with possible individual recognition]," Umezawa, paragraph 8).

The combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, and Kondo do not disclose wherein the authentication process is performed by generating authentication information from an image outputted from an image evaluation part of the image input device. In the combination of Umezawa, Wallace et al.

(EP 1246151), Ishizuka, and Kondo, image evaluation is performed if the authentication process fails.

However, Uchida teaches wherein the authentication process is performed by generating authentication information from an image outputted from an image evaluation part of the image input device (Uchida, Fig. 2, S5; Fig. 3)

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of the combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, and Kondo to perform the authentication process after the image evaluation part has determined that the image is of suitable quality because as Uchida states in column 9, lines 32 to 35, “When the user inputs a fingerprint of such a low quality as just described, conventionally a method is usually employed wherein it is determined that "authentication by an automatic verification process is impossible." Obviously, if a bad image is captured (e.g. one with bad image quality) is captured, there is no mechanism to preclude the poor image from being processed because conventional biometric devices merely act as a conduit in transferring information to the computer regardless of its quality. As a result, processing time of the computer and bandwidth associated with the signal line are wasted because user authentication or identification is virtually guaranteed to fail when processing a bad image.

Regarding claim 13, the combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, and Kondo discloses an authentication device comprising: an image

input device according to claim 3; and an authentication process part which performs an authentication process by generating authentication information from an image outputted from the image input device, and by comparing the authentication information with registered authentication information previously registered ("And predetermined characteristic quantity is extracted and coded from the image of the cut-down iris, and an iris code is generated (step 25).", Umezawa, paragraph 7; "The control section 2 of this equipment 1 judges whether it is having the conspicuity which is like [with individual recognition possible for this iris code as compared with a standard pattern in the generated iris code] (step 26). When a judgment result is O.K. (i.e., when it is judged that it has the conspicuity which is like [with possible individual recognition]," Umezawa, paragraph 8).

The combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, and Kondo do not disclose wherein the authentication process is performed by generating authentication information from an image outputted from an image evaluation part of the image input device. In the combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, and Kondo, image evaluation is performed if the authentication process fails.

However, Uchida teaches wherein the authentication process is performed by generating authentication information from an image outputted from an image evaluation part of the image input device (Uchida, Fig. 2, S5; Fig. 3) .

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of the combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, and Kondo to perform the authentication process after the image evaluation part has determined that the image is of suitable quality because as Uchida states in column 9, lines 32 to 35, “When the user inputs a fingerprint of such a low quality as just described, conventionally a method is usually employed wherein it is determined that "authentication by an automatic verification process is impossible." Obviously, if a bad image is captured (e.g. one with bad image quality) is captured, there is no mechanism to preclude the poor image from being processed because conventional biometric devices merely act as a conduit in transferring information to the computer regardless of its quality. As a result, processing time of the computer and bandwidth associated with the signal line are wasted because user authentication or identification is virtually guaranteed to fail when processing a bad image.

Regarding claim 14, the combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, and Kondo disclose an authentication device comprising: an image input device according to claim 4; and an authentication process part which performs an authentication process by generating authentication information from an image outputted from the image input device, and by comparing the authentication information with registered authentication information previously registered (“And predetermined characteristic quantity is extracted and coded

from the image of the cut-down iris, and an iris code is generated (step 25).", Umezawa, paragraph 7; "The control section 2 of this equipment 1 judges whether it is having the conspicuity which is like [with individual recognition possible for this iris code as compared with a standard pattern in the generated iris code] (step 26). When a judgment result is O.K. (i.e., when it is judged that it has the conspicuity which is like [with possible individual recognition]," Umezawa, paragraph 8).

The combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, and Kondo do not disclose wherein the authentication process is performed by generating authentication information from an image outputted from an image evaluation part of the image input device. In the combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, and Kondo, image evaluation is performed if the authentication process fails.

However, Uchida teaches wherein the authentication process is performed by generating authentication information from an image outputted from an image evaluation part of the image input device (Uchida, Fig. 2, S5; Fig. 3)

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of the combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, and Kondo to perform the authentication process after the image evaluation part has determined that the image is of suitable quality because as Uchida states in column 9, lines 32 to 35, "When the user inputs a fingerprint of such a low quality as just described, conventionally a method is

usually employed wherein it is determined that "authentication by an automatic verification process is impossible." Obviously, if a bad image is captured (e.g. one with bad image quality) is captured, there is no mechanism to preclude the poor image from being processed because conventional biometric devices merely act as a conduit in transferring information to the computer regardless of its quality. As a result, processing time of the computer and bandwidth associated with the signal line are wasted because user authentication or identification is virtually guaranteed to fail when processing a bad image.

Regarding claim 20, the combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, and Kondo disclose the authentication device according to claim 12, wherein the image is an eye image of a user to be authenticated (“when the image considered that the iris code suitable for identification is acquirable is displayed looking at the dynamic image of the face (especially perimeter of an eye), “ Umezawa, paragraph 7);

the authentication process part comprises: an authentication information generation part which generates the authentication information by encoding an iris area contained in the eye image (“And predetermined characteristic quantity is extracted and coded from the image of the cut-down iris, and an iris code is generated (step 25).”, Umezawa, paragraph 7);

a storage part which stores the registered authentication information previously registered (Umezawa, paragraph 4);

and a comparison and collation part which compares and collates the registered authentication information stored in the storage part with the authentication information generated by the authentication information generation part ("The control section 2 of this equipment 1 judges whether it is having the conspicuity which is like [with individual recognition possible for this iris code as compared with a standard pattern in the generated iris code] (step 26). When a judgment result is O.K. (i.e., when it is judged that it has the conspicuity which is like [with possible individual recognition]," Umezawa, paragraph 8).

Regarding claim 21, the combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, and Kondo disclose the authentication device according to claim 13, wherein the image is an eye image of a user to be authenticated ("when the image considered that the iris code suitable for identification is acquirable is displayed looking at the dynamic image of the face (especially perimeter of an eye), " Umezawa, paragraph 7);

the authentication process part comprises: an authentication information generation part which generates the authentication information by encoding an iris area contained in the eye image ("And predetermined characteristic quantity is extracted and coded from the image of the cut-down iris, and an iris code is generated (step 25).", Umezawa, paragraph 7);

a storage part which stores the registered authentication information previously registered (Umezawa, paragraph 4);

and a comparison and collation part which compares and collates the registered authentication information stored in the storage part with the authentication information generated by the authentication information generation part ("The control section 2 of this equipment 1 judges whether it is having the conspicuity which is like [with individual recognition possible for this iris code as compared with a standard pattern in the generated iris code] (step 26). When a judgment result is O.K. (i.e., when it is judged that it has the conspicuity which is like [with possible individual recognition]," Umezawa, paragraph 8).

Regarding claim 22, the combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, Kondo, and Uchida disclose the authentication device according to claim 14, wherein the image is an eye image of a user to be authenticated ("when the image considered that the iris code suitable for identification is acquirable is displayed looking at the dynamic image of the face (especially perimeter of an eye), " Umezawa, paragraph 7);

the authentication process part comprises: an authentication information generation part which generates the authentication information by encoding an iris area contained in the eye image ("And predetermined characteristic quantity is extracted and coded from the image of the cut-down iris, and an iris code is generated (step 25).", Umezawa, paragraph 7);

a storage part which stores the registered authentication information previously registered (Umezawa, paragraph 4);

and a comparison and collation part which compares and collates the registered authentication information stored in the storage part with the authentication information generated by the authentication information generation part ("The control section 2 of this equipment 1 judges whether it is having the conspicuity which is like [with individual recognition possible for this iris code as compared with a standard pattern in the generated iris code] (step 26). When a judgment result is O.K. (i.e., when it is judged that it has the conspicuity which is like [with possible individual recognition]," Umezawa, paragraph 8).

Claims 15 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Umezawa (JP 2000-060825), Wallace et al. (EP 1246151), Ishizuka (JP 64-082185), Matsushita (JP 10-005195), and Uchida (US 6,980, 669).

Regarding claim 15, the combination of Uchida, Wallace et al. (EP 1246151), Ishizuka, Matsushita authentication device comprising: an image input device according to claim 5; and an authentication process part which performs an authentication process by generating authentication information from an image outputted from the image input device, and by comparing the authentication information with registered authentication information previously registered ("And predetermined characteristic quantity is extracted and coded from the image of

the cut-down iris, and an iris code is generated (step 25).", Umezawa, paragraph 7; "The control section 2 of this equipment 1 judges whether it is having the conspicuity which is like [with individual recognition possible for this iris code as compared with a standard pattern in the generated iris code] (step 26). When a judgment result is O.K. (i.e., when it is judged that it has the conspicuity which is like [with possible individual recognition]," Umezawa, paragraph 8).

The combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, Kondo, and Matsushita do not disclose wherein the authentication process is performed by generating authentication information from an image outputted from an image evaluation part of the image input device. In the combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, Kondo, and Matsushita image evaluation is performed if the authentication process fails.

However, Uchida teaches wherein the authentication process is performed by generating authentication information from an image outputted from an image evaluation part of the image input device (Uchida, Fig. 2, S5; Fig. 3)

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of the combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, and Kondo to perform the authentication process after the image evaluation part has determined that the image is of suitable quality because as Uchida states in column 9, lines 32 to 35, "When the user inputs a fingerprint of such a low quality as just described, conventionally a method is usually employed wherein it is determined that "authentication by an automatic

verification process is impossible." Obviously, if a bad image is captured (e.g. one with bad image quality) is captured, there is no mechanism to preclude the poor image from being processed because conventional biometric devices merely act as a conduit in transferring information to the computer regardless of its quality. As a result, processing time of the computer and bandwidth associated with the signal line are wasted because user authentication or identification is virtually guaranteed to fail when processing a bad image.

Regarding claim 23, the authentication device according to claim 15, wherein the image is an eye image of a user to be authenticated ("when the image considered that the iris code suitable for identification is acquirable is displayed looking at the dynamic image of the face (especially perimeter of an eye)," Umezawa, paragraph 7);

The authentication process part comprises: an authentication information generation part which generates the authentication information by encoding an iris area contained in the eye image ("And predetermined characteristic quantity is extracted and coded from the image of the cut-down iris, and an iris code is generated (step 25).", Umezawa, paragraph 7);

A storage part which stores the registered authentication information previously registered (Umezawa, paragraph 4);

And a comparison and collation part which compares and collates the registered authentication information stored in the storage part with the authentication information generated by the authentication information generation part ("The control section 2 of this equipment 1 judges whether it is having the conspicuity which is like [with individual recognition possible for this iris code as compared with a standard pattern in the generated iris code] (step 26). When a judgment result is O.K. (i.e., when it is judged that it has the conspicuity which is like [with possible individual recognition]," Umezawa, paragraph 8).

Claim 16 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Umezawa (JP 2000-060825), Flom et al. (US 4,641,349), Kondo (US 7,130,453), and Uchida (US 6,980, 669).

Regarding claim 16, the combination of Umezawa, Flom, and Kondo disclose an authentication device comprising: an image input device according to claim 6; and an authentication process part which performs an authentication process by generating authentication information from an image outputted from the image input device, and by comparing the authentication information with registered authentication information previously registered ("And predetermined characteristic quantity is extracted and coded from the image of the cut-down iris, and an iris code is generated (step 25).", Umezawa, paragraph 7; "The control

section 2 of this equipment 1 judges whether it is having the conspicuity which is like [with individual recognition possible for this iris code as compared with a standard pattern in the generated iris code] (step 26). When a judgment result is O.K. (i.e., when it is judged that it has the conspicuity which is like [with possible individual recognition]," Umezawa, paragraph 8).

The combination of Umezawa, Flom, and Kondo do not disclose wherein the authentication process is performed by generating authentication information from an image outputted from an image evaluation part of the image input device. In the combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, and Kondo, image evaluation is performed if the authentication process fails.

However, Uchida teaches wherein the authentication process is performed by generating authentication information from an image outputted from an image evaluation part of the image input device (Uchida, Fig. 2, S5; Fig. 3)

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of the combination of Umezawa, Flom and Kondo to perform the authentication process after the image evaluation part has determined that the image is of suitable quality because as Uchida states in column 9, lines 32 to 35, "When the user inputs a fingerprint of such a low quality as just described, conventionally a method is usually employed wherein it is determined that "authentication by an automatic verification process is impossible." Obviously, if a bad image is captured (e.g. one with bad image quality) is captured, there is no mechanism to preclude the poor image from

being processed because conventional biometric devices merely act as a conduit in transferring information to the computer regardless of its quality. As a result, processing time of the computer and bandwidth associated with the signal line are wasted because user authentication or identification is virtually guaranteed to fail when processing a bad image.

Regarding claim 24, the combination of Umezawa, Kondo, Flom, and Uchida disclose the authentication device according to claim 16, wherein the image is an eye image of a user to be authenticated ("when the image considered that the iris code suitable for identification is acquirable is displayed looking at the dynamic image of the face (especially perimeter of an eye), " Umezawa, paragraph 7);

the authentication process part comprises: an authentication information generation part which generates the authentication information by encoding an iris area contained in the eye image ("And predetermined characteristic quantity is extracted and coded from the image of the cut-down iris, and an iris code is generated (step 25).", Umezawa, paragraph 7);

a storage part which stores the registered authentication information previously registered (Umezawa, paragraph 4);

and a comparison and collation part which compares and collates the registered authentication information stored in the storage part with the authentication information generated by the authentication information generation part ("The

control section 2 of this equipment 1 judges whether it is having the conspicuity which is like [with individual recognition possible for this iris code as compared with a standard pattern in the generated iris code] (step 26). When a judgment result is O.K. (i.e., when it is judged that it has the conspicuity which is like [with possible individual recognition]," Umezawa, paragraph 8).

Claims 17,18, 19, 25, 26, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Umezawa (JP 2000-060825), Wallace et al. (EP 1246151) , Ishizuka (JP 64-082185) and Kondo (US 7,130,453), Matsushita (JP 10-005195), and Uchida (US 6,980, 669).

Regarding claim 17, the combination of Umezwa, Wallace et al. (EP 1246151), Ishizuka, Kondo, and Matsushita disclose an authentication device comprising: an image input device according to claim 9; and an authentication process part which performs an authentication process by generating authentication information from an image outputted from the image input device, and by comparing the authentication information with registered authentication information previously registered ("And predetermined characteristic quantity is extracted and coded from the image of the cut-down iris, and an iris code is generated (step 25).", Umezawa, paragraph 7; "The control section 2 of this equipment 1 judges whether it is having the conspicuity which is like [with individual recognition possible for this iris code as compared with a standard

pattern in the generated iris code] (step 26). When a judgment result is O.K. (i.e., when it is judged that it has the conspicuity which is like [with possible individual recognition]," Umezawa, paragraph 8).

The combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, Kondo, and Matsushita do not disclose wherein the authentication process is performed by generating authentication information from an image outputted from an image evaluation part of the image input device. In the combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, and Kondo, image evaluation is performed if the authentication process fails.

However, Uchida teaches wherein the authentication process is performed by generating authentication information from an image outputted from an image evaluation part of the image input device (Uchida, Fig. 2, S5; Fig. 3)

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of the combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, Kondo, and Matsushita to perform the authentication process after the image evaluation part has determined that the image is of suitable quality because as Uchida states in column 9, lines 32 to 35, "When the user inputs a fingerprint of such a low quality as just described, conventionally a method is usually employed wherein it is determined that "authentication by an automatic verification process is impossible." Obviously, if a bad image is captured (e.g. one with bad image quality) is captured, there is no mechanism to preclude the poor image from being processed because conventional biometric

devices merely act as a conduit in transferring information to the computer regardless of its quality. As a result, processing time of the computer and bandwidth associated with the signal line are wasted because user authentication or identification is virtually guaranteed to fail when processing a bad image.

Regarding claim 18, the combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, Kondo, Matsushita, An authentication device comprising: an image input device according to claim 10; and an authentication process part which performs an authentication process by generating authentication information from an image outputted from the image input device, and by comparing the authentication information with registered authentication information previously registered ("And predetermined characteristic quantity is extracted and coded from the image of the cut-down iris, and an iris code is generated (step 25).", Umezawa, paragraph 7; "The control section 2 of this equipment 1 judges whether it is having the conspicuity which is like [with individual recognition possible for this iris code as compared with a standard pattern in the generated iris code] (step 26). When a judgment result is O.K. (i.e., when it is judged that it has the conspicuity which is like [with possible individual recognition]," Umezawa, paragraph 8).

The combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, Kondo, and Matsushita do not disclose wherein the authentication process is performed

by generating authentication information from an image outputted from an image evaluation part of the image input device. In the combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, Kondo, and Matsushita disclose an image evaluation is performed if the authentication process fails.

However, Uchida teaches wherein the authentication process is performed by generating authentication information from an image outputted from an image evaluation part of the image input device (Uchida, Fig. 2, S5; Fig. 3)

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of the combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, Kondo, and Matsushita to perform the authentication process after the image evaluation part has determined that the image is of suitable quality as taught by Uchida because as Uchida states in column 9, lines 32 to 35, “When the user inputs a fingerprint of such a low quality as just described, conventionally a method is usually employed wherein it is determined that "authentication by an automatic verification process is impossible." Obviously, if a bad image is captured (e.g. one with bad image quality) is captured, there is no mechanism to preclude the poor image from being processed because conventional biometric devices merely act as a conduit in transferring information to the computer regardless of its quality. As a result, processing time of the computer and bandwidth associated with the signal line are wasted because user authentication or identification is virtually guaranteed to fail when processing a bad image.

Regarding claim 19, the combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, Kondo, and Matsushita disclose an authentication device comprising: an image input device according to claim 11; and an authentication process part which performs an authentication process by generating authentication information from an image outputted from the image input device, and by comparing the authentication information with registered authentication information previously registered ("And predetermined characteristic quantity is extracted and coded from the image of the cut-down iris, and an iris code is generated (step 25).", Umezawa, paragraph 7; "The control section 2 of this equipment 1 judges whether it is having the conspicuity which is like [with individual recognition possible for this iris code as compared with a standard pattern in the generated iris code] (step 26). When a judgment result is O.K. (i.e., when it is judged that it has the conspicuity which is like [with possible individual recognition]," Umezawa, paragraph 8).

The combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, Kondo, and Matsushita do not disclose wherein the authentication process is performed by generating authentication information from an image outputted from an image evaluation part of the image input device. In the combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, Kondo, and Matsushita, the image evaluation is performed if the authentication process fails.

However, Uchida teaches wherein the authentication process is performed by generating authentication information from an image outputted from an image evaluation part of the image input device (Uchida, Fig. 2, S5; Fig. 3)

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of the combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, Kondo, and Matsushita to perform the authentication process after the image evaluation part has determined that the image is of suitable quality because as Uchida states in column 9, lines 32 to 35, “When the user inputs a fingerprint of such a low quality as just described, conventionally a method is usually employed wherein it is determined that "authentication by an automatic verification process is impossible." Obviously, if a bad image is captured (e.g. one with bad image quality) is captured, there is no mechanism to preclude the poor image from being processed because conventional biometric devices merely act as a conduit in transferring information to the computer regardless of its quality. As a result, processing time of the computer and bandwidth associated with the signal line are wasted because user authentication or identification is virtually guaranteed to fail when processing a bad image.

Regarding claim 25, the combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, Kondo, Matsushita, and Uchida disclose the authentication device according to claim 17, wherein the image is an eye image of a user to be

authenticated (“when the image considered that the iris code suitable for identification is acquirable is displayed looking at the dynamic image of the face (especially perimeter of an eye), “ Umezawa, paragraph 7);

the authentication process part comprises: an authentication information generation part which generates the authentication information by encoding an iris area contained in the eye image (“And predetermined characteristic quantity is extracted and coded from the image of the cut-down iris, and an iris code is generated (step 25).”, Umezawa, paragraph 7);

a storage part which stores the registered authentication information previously registered (Umezawa, paragraph 4);

and a comparison and collation part which compares and collates the registered authentication information stored in the storage part with the authentication information generated by the authentication information generation part (“The control section 2 of this equipment 1 judges whether it is having the conspicuity which is like [with individual recognition possible for this iris code as compared with a standard pattern in the generated iris code] (step 26). When a judgment result is O.K. (i.e., when it is judged that it has the conspicuity which is like [with possible individual recognition],” Umezawa, paragraph 8).

Regarding claim 26, the combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, Kondo, Matsushita, and Uchida disclose the authentication device

according to claim 18, wherein the image is an eye image of a user to be authenticated ("when the image considered that the iris code suitable for identification is acquirable is displayed looking at the dynamic image of the face (especially perimeter of an eye), " Umezawa, paragraph 7);

the authentication process part comprises: an authentication information generation part which generates the authentication information by encoding an iris area contained in the eye image ("And predetermined characteristic quantity is extracted and coded from the image of the cut-down iris, and an iris code is generated (step 25).", Umezawa, paragraph 7);

a storage part which stores the registered authentication information previously registered (Umezawa, paragraph 4);

and a comparison and collation part which compares and collates the registered authentication information stored in the storage part with the authentication information generated by the authentication information generation part ("The control section 2 of this equipment 1 judges whether it is having the conspicuity which is like [with individual recognition possible for this iris code as compared with a standard pattern in the generated iris code] (step 26). When a judgment result is O.K. (i.e., when it is judged that it has the conspicuity which is like [with possible individual recognition]," Umezawa, paragraph 8).

Regarding claim 27, the combination of Umezawa, Wallace et al. (EP 1246151), Ishizuka, Kondo, Matsushita, and Uchida disclose the authentication device according to claim 19, wherein the image is an eye image of a user to be authenticated ("when the image considered that the iris code suitable for identification is acquirable is displayed looking at the dynamic image of the face (especially perimeter of an eye), " Umezawa, paragraph 7);

the authentication process part comprises: an authentication information generation part which generates the authentication information by encoding an iris area contained in the eye image ("And predetermined characteristic quantity is extracted and coded from the image of the cut-down iris, and an iris code is generated (step 25).", Umezawa, paragraph 7);

a storage part which stores the registered authentication information previously registered (Umezawa, paragraph 4);

and a comparison and collation part which compares and collates the registered authentication information stored in the storage part with the authentication information generated by the authentication information generation part ("The control section 2 of this equipment 1 judges whether it is having the conspicuity which is like [with individual recognition possible for this iris code as compared with a standard pattern in the generated iris code] (step 26). When a judgment

result is O.K. (i.e., when it is judged that it has the conspicuity which is like [with possible individual recognition]," Umezawa, paragraph 8).

Response to Arguments

Applicant's arguments with respect to claim 1-27 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELISA M. RICE whose telephone number is (571)270-1582. The examiner can normally be reached on 8:00a.m.-5:30p.m. EST Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian P. Werner can be reached on (571)272-7401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Elisa M Rice/
Examiner, Art Unit 2624

/Brian P. Werner/
Supervisory Patent Examiner, Art Unit 2624